IN THE CLAIMS:

A complete listing of the claims is set forth below. Please amend the claims as follows:

1.   **(Currently Amended)** A computer-implemented method for solving a supply chain planning problem, comprising the steps of:

decompositioning the supply chain planning problem into a plurality of independent sub-problems;

providing a plurality of distributed database partitions, ~~partitions in a database,~~ each partition of said plurality of distributed database partitions associated with a respective independent sub-problem of said supply chain planning problem;

operating at least one processor in said database, each of said at least one processor associated with a respective partition of said plurality of distributed database partitions;

forming a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective independent sub-problem of said supply chain planning problem;

loading data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solving each of said plurality of said independent sub-problems by separate processes operating in parallel in said database.

2.   **(Previously Presented)** The method of Claim 1, further comprising the steps of:

forming a plurality of clusters, each of said clusters including said plurality of related items; and

forming said plurality of distributed sub-problem partitions from said plurality of clusters.

3.   **(Previously Presented)** The method of Claim 1, wherein the number of distributed sub-problems is equal to the number of database partitions.

4.   **(Original)** The method of Claim 1, wherein said plurality of related items are related by one or more pre-defined relationship rules.

5.   **(Original)** The method of Claim 2, wherein the step of forming said plurality of said clusters further comprises a step of assigning a CLUSTER_ID to each item of said plurality of related items.

6.   **(Previously Presented)** The method of Claim 2, wherein the step of forming a plurality of distributed sub-problem partitions from said plurality of clusters further comprises a step of equally sizing said distributed sub-problem partitions.

7.   **(Previously Presented)** The method of Claim 1, wherein the step of solving each of said plurality of said distributed sub-problems further comprises a step of solving said plurality of independent sub-problems in parallel.

8.   **(Canceled)**

9. **(Currently Amended)** A computer-implemented method for solving a supply chain planning problem, comprising the steps of:

decompositioning the supply chain planning problem into a plurality of independent sub-problems;

providing a plurality of distributed <u>database partitions,</u> ~~partitions in a database,~~ each partition of said plurality of distributed <u>database</u> partitions associated with a respective independent sub-problem of said supply chain planning problem;

operating at least one processor in said database, each of said at least one processor associated with a respective partition of said plurality of distributed <u>database</u> partitions;

storing data associated with at least one new item in a temporary database location;

forming at least one cluster, said at least one cluster including said data associated with said at least one item;

merging said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

loading said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solving said at least one independent sub-problem by separate processes operating in parallel in said database.

10. **(Currently Amended)** A computer-implemented system for solving a supply chain planning problem, comprising:

a plurality of independent sub-problems decomposed from said supply chain planning problem;

a database, said database including a plurality of distributed <u>database</u> partitions, each partition of said plurality of distributed <u>database</u> partitions associated with a respective independent sub-problem of said supply chain planning problem; and

at least one processor operating in said database, the at least one processor associated with a respective partition of said plurality of distributed <u>database</u> partitions, and collectively operable to:

form a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective independent sub-problem of said supply chain planning problem;

load data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solve said plurality of said independent sub-problems by separate processes operating in parallel in said database.

11. **(Previously Presented)** The system of Claim 10, further operable to:

form a plurality of clusters, each of said clusters including said plurality of related items; and

form said plurality of distributed sub-problem partitions from said plurality of clusters.

12. **(Previously Presented)** The system of Claim 10, wherein the number of distributed sub-problems is equal to the number of database partitions.

13. **(Original)** The system of Claim 10, wherein said plurality of related items are related by one or more pre-defined relationship rules.

14.   **(Previously Presented)** The system of Claim 11, wherein said at least one processor is further operable to:

   assign a CLUSTER_ID to each item of said plurality of related items.

15.   **(Previously Presented)** The system of Claim 10, wherein said at least one processor is further operable to:

   equally size said distributed sub-problem partitions.

16.   **(Previously Presented)** The system of Claim 10, wherein said at least one processor is further operable to:

   solve said plurality of independent sub-problems in parallel.

17.   **(Canceled)**

18.   **(Currently Amended)** A computer-implemented system for solving a supply chain planning problem, comprising:

a plurality of independent sub-problems decomposed from the supply chain planning problem;

a database, said database comprising a plurality of distributed <u>database</u> partitions and a temporary storage location, each partition of said plurality of distributed <u>database</u> partitions associated with a respective independent sub-problem of said supply chain planning problem; and

at least one processor operating in said database, the at least one processor associated with a respective partition of said plurality of distributed <u>database</u> partitions, and collectively operable to:

store data associated with at least one new item in the temporary database location;

form at least one cluster, said at least one cluster including said data associated with said at least one item;

merge said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

load said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solve said at least one independent sub-problem by separate processes operating in parallel in said database.

19. **(Currently Amended)** Software for solving a supply chain planning problem, the software being embodied in computer-readable media and when executed operable to:

decompose the supply chain planning problem into a plurality of independent sub-problems;

provide a plurality of distributed database partitions, ~~partitions in a database,~~ each partition of said plurality of distributed database partitions associated with a respective independent sub-problem of said supply chain planning problem;

operate at least one processor in said database, each of said at least one processor associated with a respective partition of said plurality of distributed database partitions;

form a plurality of distributed sub-problem partitions, each of said distributed sub-problem partitions including a plurality of related items and associated with a respective independent sub-problem of said supply chain planning problem;

load data into a plurality of distributed database partitions, said data associated with said plurality of related items, and each of said distributed database partitions associated with a respective one of each of said distributed sub-problem partitions; and

solve each of said plurality of said independent sub-problems by separate processes operating in parallel in said database.

20. **(Previously Presented)** The software of Claim 19, when executed further operable to:

form a plurality of clusters, each of said clusters including said plurality of related items; and

form said plurality of distributed sub-problem partitions from said plurality of clusters.

21. **(Previously Presented)** The software of Claim 19, wherein the number of distributed sub-problems is equal to the number of database partitions.

22.   **(Original)** The software of Claim 19, wherein said plurality of related items are related by one or more pre-defined relationship rules.

23.   **(Original)** The software of Claim 20, wherein forming said plurality of said clusters further comprises assigning a CLUSTER_ID to each item of said plurality of related items.

24.   **(Previously Presented)** The software of Claim 20, wherein forming a plurality of distributed sub-problem partitions from said plurality of clusters further comprises equally sizing said distributed sub-problem partitions.

25.   **(Previously Presented)** The software of Claim 19, wherein solving each of said plurality of said distributed sub-problems further comprises solving said plurality of distributed sub-problems in parallel.

26.   **(Canceled)**

27.   **(Currently Amended)** Software for solving a supply chain planning problem, the software being embodied in computer-readable media and when executed operable to:

decompose the supply chain planning problem into a plurality of independent sub-problems;

provide a plurality of distributed database partitions, ~~partitions in a database,~~ each partition of said plurality of distributed database partitions associated with a respective independent sub-problem of said supply chain planning problem;

operate at least one processor in said database, each of said at least one processor associated with a respective partition of said plurality of distributed database partitions;

store data associated with at least one new item in a temporary database location;

form at least one cluster, said at least one cluster including said data associated with said at least one item;

merge said at least one cluster with at least one cluster associated with at least one distributed sub-problem partition;

load said data into at least one distributed database partition, said at least one distributed database partition associated with said at least one distributed sub-problem partition; and

solve said at least one independent sub-problem by separate processes operating in parallel in said database.

28.   **(Previously Presented)** The method of Claim 1, wherein said supply chain planning problems comprise problems selected from the group consisting of demand forecasting, service level planning, and replenishment planning.

29.   **(Previously Presented)** The system of Claim 10, wherein said supply chain planning problems comprise problems selected from the group consisting of demand forecasting, service level planning, and replenishment planning.

30.   **(Previously Presented)** The software of Claim 19, wherein said supply chain planning problems comprise problems selected from the group consisting of demand forecasting, service level planning, and replenishment planning.